

WHAT IS CLAIMED IS:

1. A lens system, comprising in order from an object side to an image side:

an aperture stop;

a first lens element which has a convex-shaped image side surface and a positive optical power; and

a second lens element which has a concave-shaped object side surface and a negative optical power; wherein

the following conditions are satisfied:

$$-1.0 < (R12 + R11) / (R12 - R11) < -0.1$$

$$1.0 < (R22 + R21) / (R22 - R21) < 3.0$$

where R11 and R12 represent respective radii of curvature of an object side surface and the image side surface of the first lens element, and R21 and R22 represent the respective radii of curvature of the object side surface and an image side surface of the second lens element.

2. The lens system according to Claim 1, wherein

the following condition is satisfied:

$$0.1 < |f2/f| < 0.8$$

where f represents a focal length of the entire lens system, and f2 represents a focal length of the second lens element.

3. The lens system according to Claim 1, further

comprising:

a third lens element which is positioned at the image side of the second lens element and has a positive optical power, and

wherein the following condition is satisfied:

$$0.5 < f_3/f < 3.0$$

where f represents a focal length of the entire lens system, and f_3 represents a focal length of the third lens element.

4. The lens system according to Claim 1, wherein the following condition is satisfied:

$$(n_1 + n_2)/2 > 0.1$$

where n_1 represents a refractive index of the first lens element, and n_2 represents a refractive index of the second lens element.

5. The lens system according to Claim 1, wherein the following condition is satisfied:

$$0.5 < d_{12}/f < 3.0$$

where f represents a focal length of the entire lens system, and d_{12} represents an interval between the first lens element and the second lens element.

6. The lens system according to Claim 3, wherein

at least one of the first lens element, second lens element, and third lens element is formed of a plastic material.

7. The lens system according to Claim 1, wherein the lens system forms an image on a photoelectric conversion element.

8. An image-taking apparatus comprising:
a lens system according to Claim 1; and
a photoelectric conversion element which receives an image formed by the lens system.

9. A lens system, comprising in order from an object side to an image side:

an aperture stop;

a first lens element which has a positive optical power;

a second lens element which has a negative optical power, the material forming the second lens element being glass; and

a third lens element which has a positive optical power; wherein

the following condition is satisfied:

$$0.5 < f_a/f < 0.9$$

$$-0.013v_2+2.05 < N_2 < -0.013v_2+2.30$$

$$N_2 > 1.65$$

where f_a represents a focal length of an air lens formed by an image side lens surface of the second lens element and an object side lens surface of the third lens element, f represents a focal length of the entire lens system, and N_2 and v_2 represent a refractive index and an Abbe's number of the material forming the second lens element, respectively.

10. The lens system according to Claim 9,
the following condition is satisfied:

$$0.1 < |f_2/f| < 0.8$$

where f_2 represents a focal length of the second lens element.

11. The lens system according to Claim 9, wherein
the material which forms the first lens element is glass, and the following condition is satisfied:

$$-0.013v_1+2.30 < N_1 < -0.013v_1+2.55$$

where N_1 and v_1 represent a refractive index and an Abbe's number of the material forming the first lens element, respectively.

12. The lens system according to Claim 9, wherein

the material which forms the third lens element is a plastic material, and

the following conditions are satisfied:

$$-0.013v_3+2.05 < N_3 < -0.013v_3+2.30$$

$$N_3 < 1.65$$

where N_3 and v_3 represent a refractive index and an Abbe's number of the material forming the third lens element, respectively.

13. The lens system according to Claim 9, wherein

the following conditions are satisfied:

$$-1.0 < (R_{12}+R_{11})/(R_{12}-R_{11}) < -0.1$$

$$1.0 < (R_{22}+R_{21})/(R_{22}-R_{21}) < 3.0$$

where R_{11} and R_{12} represent respective radii of curvature of an object side surface and an image side surface of the first lens element, and R_{21} and R_{22} represent respective radii of curvature of an object side surface and the image side surface of the second lens element.

14. The lens system according to Claim 9, wherein

the lens system forms an image on a photoelectric conversion element.

15. An image-taking apparatus comprising:

a lens system according to Claim 9; and

a photoelectric conversion element which receives an image formed by the lens system.

16. A lens system, comprising in order from an object side to an image side:

an aperture stop;

a first lens element which has a positive optical power;

a second lens element which has a negative optical power; and

a third lens element which has a positive optical power, the material forming the third lens element being a plastic material; wherein

the following conditions are satisfied:

$$0.5 < f_a/f < 0.9$$

$$-0.013\sqrt{3} + 2.05 < N_3 < -0.013\sqrt{3} + 2.30$$

$$N_3 < 1.65$$

where f_a represents a focal length of an air lens formed by an image side lens surface of the second lens element and an object side lens surface of the third lens element, f represents a focal length of the entire lens system, and N_3 and $\sqrt{3}$ represent a refractive index and an Abbe's number of the material forming the third lens element, respectively.

17. The lens system according to Claim 16, wherein the following conditions are satisfied:

$$0 < (R_{32} + R_{31}) / (R_{32} - R_{31}) < 5.0$$

$$1.0 < f_3 / f < 3.0$$

where R_{31} and R_{32} represent respective radii of curvature of the object side surface and an image side surface of the third lens element, and f_3 represents a focal length of the third lens element.

18. The lens system according to Claim 16, wherein the following conditions are satisfied:

$$-1.0 < (R_{12} + R_{11}) / (R_{12} - R_{11}) < -0.1$$

$$1.0 < (R_{22} + R_{21}) / (R_{22} - R_{21}) < 3.0$$

where R_{11} and R_{12} represent respective radii of curvature of an object side surface and an image side surface of the first lens element, and R_{21} and R_{22} represent respective radii of curvature of an object side surface and the image side surface of the second lens element.

19. The lens system according to Claim 16, wherein

the lens system forms an image on a photoelectric conversion element.

20. An image-taking apparatus comprising:

a lens system according to Claim 16; and

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a photoelectric conversion element which receives an image formed by the lens system.